RAVE vertex finder

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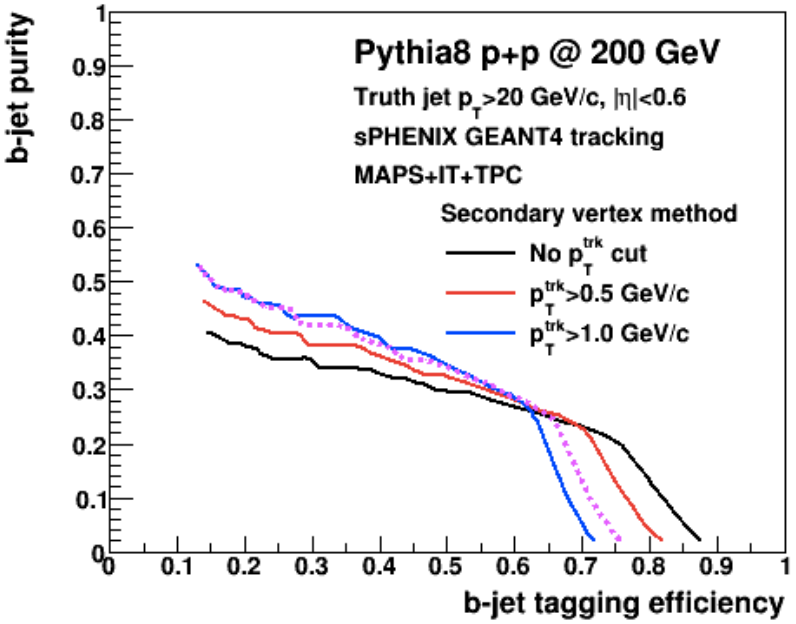
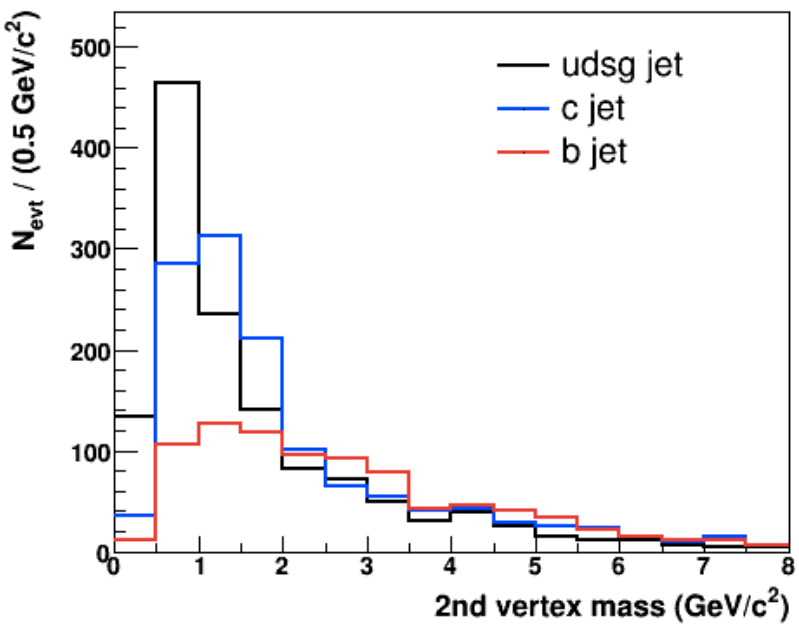
- Vertex finding with RAVE
  - Implemented in PHG4TrackKalmanFitter.h(C)
  - Use tracks from GenFit

- Vertex finding procedure
  - Primary vertex finding
    - all tracks (chi2/ndf<5)
    - adaptive method for single vertex (“avf-smoothing”)
  - Secondary vertex finding
    - scan jets (currently using truth_jet_R04)
      →need to check performance with full calorimeter simulation?
    - put tracks (chi2/ndf<5) associated with a single jet into the vertex finder
    - adaptive method for multiple vertices (“avr-smoothing”)
    - save reconstructed vertices in another vertex map
    - need to add additional variable in ‘SvtxVertexMap’ for jet ID

- Analysis
  - Scan the vertex map of secondary vertex
    - can access information of associated tracks w/ track index & track map
  - Calculate vertex p_T, 2nd vertex mass (assume pion)
    - vertex p_T / jet p_T is useful for improve b-jet purity
    - 2nd vertex mass distribution can be use to reject K^0 and decompose light/c/b-jets





- Analysis
  - Scan the vertex map of secondary vertex
    - can access information of associated tracks w/ track index & track map
  - Calculate vertex p_T, 2^{nd} vertex mass (assume pion)
    - vertex p_T / jet p_T is useful for improve b-jet purity
    - 2^{nd} vertex mass distribution can be use to reject K^0 and decompose light/c/b-jets

- To do
  - After including updates from today's discussion, ready for pull request
  - Blind analysis for b-jet yield in p+p w/ 2^{nd} vertex mass
  - Embedding study to evaluate purity-efficiency in heavy-ion collisions